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September 23, 2019

VIA E-MAIL AND ELECTRONIC FILING

Ms. Lisa Fowlkes
Chief, Public Safety and Homeland Security Bureau
Federal Communications Commission
445 12th Street, SW
Washington, DC 20554

Re: *Promoting Network Resiliency During Disasters, PS Docket No. 19-251*

Dear Chief Fowlkes:

Thank you for your letter inquiring about AT&T's strategies to mitigate the potential effects of shutting down power in parts of California on the availability of wireless services.

As the first (and to our knowledge, only) telecommunications provider to be certified under the Department of Homeland Security's Private Sector Preparedness (PS-Prep) Program, AT&T has repeatedly demonstrated its capabilities for planning for, responding to, and recovering from disasters and other emergencies. AT&T has invested over \$600M in specialized network recovery assets and 145,000 hours in training and exercises for its Network Disaster Recovery (NDR) team to ensure readiness and ability to respond to the communications outages that typically accompany disasters. And, as the private partner working with the First Responder Network Authority (FirstNet), AT&T regularly coordinates with Public Safety and makes their telecommunications needs our priority.

Of course, commercial power is critical to providing wireless services, and AT&T has been active in several proceedings before the California Public Utilities Commission (CPUC) and remains engaged in ongoing proceedings and coordination with the commercial power utilities. The CPUC guidelines for power shut-off require the Public Safety Power Shut-off (PSPS) to be a last resort and must consider the overall safety of the public as the foremost criteria. To this end, one of the requirements for implementing a PSPS is appropriate and advanced notification of possible power shut-off to stakeholders including communications providers, including wireless carriers, to allow them to implement their own contingency plans to minimize disruption of wireless services. In addition, the CPUC has also ordered that the electric utilities provide maps of their power shut-off areas. Adequate notice of the timing and areas affected by a commercial power shut-off would allow AT&T to implement its own backup power contingency plans to both minimize the disruption to wireless service and the danger to its employees and contractors. Overall, the development of notification protocols remains an evolving process at the CPUC.

As a practical matter, maintaining continuous wireless service under emergency circumstances requires on-demand access to local facilities for refueling of generators or replenishment of other backup power sources. If this access is impeded or prohibited for safety reasons, then the availability of wireless services necessarily will be limited by remaining backup power at those facilities at that time. Afterwards, when it is safe for technicians to return to the location of network facilities, network and backup power restoration efforts can begin.

In either case, AT&T's network is designed with backup power solutions at multiple points throughout the network, and we have a fleet of mobile generators with a dedicated team that deploys these as needed. We have a response plan and protocols in place specifically for public safety power shut-off events. Our goal is to maintain communications for our customers to the fullest extent possible when these power shut-off events occur. Afterwards, AT&T assesses the resiliency of our wireless network during these shut-off events. Where possible, appropriate, and permitted, we augment our backup power with generators or strategically stage portable generators nearby. Notably, while these strategies may help mitigate the impacts from a power shut-off event, they are not effective for mitigating the disruption to wireless communications when our facilities are damaged by fire.

AT&T's macro cell sites have battery, generator, and/or hydrogen fuel cell backup power. Although the length of battery backup depends on the usage, traffic, and size of the site, battery backup at AT&T's macro cell sites is generally a minimum of four hours if the site has no fixed generator, and a minimum of two hours if the site has a fixed generator. In addition, approximately 78% of AT&T's existing macro cell sites in California have either a fixed generator or hydrogen fuel cell backup power as the primary source of backup power or are engineered so a generator can be quickly connected to them; cell sites with fixed generators or hydrogen fuel cells have 72-120 hours of backup power. AT&T continues to evaluate opportunities to deploy even more fixed generators to existing macro cell sites in coming years.

Furthermore, when faced with the loss of commercial power during emergencies or disasters, AT&T does not simply rely on its default backup power capabilities. Rather, in preparing for possible disasters, AT&T stages extended-life batteries and portable generators in safe locations for immediate deployment. During and after a disaster, if cell sites have ceased to operate, AT&T deploys mobile assets such as Cell on Wheels (COWs) and Cell on Light Trucks (COLTs) as needed to maintain its network and provide service to our customers and first responders, all of which operate on their own independent power source. Of course, conditions on the ground (such as lack of access to cell towers because of road closures and safety concerns) may limit AT&T's ability to timely deploy necessary assets where they are needed to avoid service disruptions in all areas.

As the private partner working with FirstNet, AT&T has a dedicated fleet of deployable network assets that help ensure public safety agencies subscribed to FirstNet have access to communications capabilities when they need it most. FirstNet is integrated into State Emergency Operations Centers (SEOCs) and has FirstNet Response Operations Group (ROG) liaisons activated 24/7 to support SEOCs during major events, including most recently during Hurricane Dorian. The FirstNet ROG worked with our Network Disaster Recovery (NDR) Team to dispatch generators where

commercial power was unavailable and other deployable assets to ensure first responders had the connectivity they needed to communicate. For example, the FirstNet ROG deployed a FirstNet Satellite CoLT to Columbia, South Carolina to provide primary communications support at the staging location of all active Urban Search and Rescue teams responding to the storm. These teams included first responders from federal, state and local agencies from across the nation. The FirstNet Program at AT&T is very closely coordinated with public safety officials and local emergency management to ensure that their communications needs are met.

Importantly, our teams already have significant experience coordinating with local public safety officials in the context of wildfires in California. Following the major fires in California in 2018, our teams deployed COLTs and generators, refueled generators and backup power sources at critical facilities, and supported the restoration efforts to ensure first responders and communities stayed connected. Our FirstNet and NDR Teams deployed a total of 11 portable cell sites and additional network recovery equipment throughout the state. We supported communications with these assets in locations throughout Malibu and Paradise, including the LA County Fire Department, and the Police Department and Adventis Hospital in Paradise.

Regarding consumer outreach, because AT&T does not have knowledge or control of any of the timing, duration, or the geographic scope of a PSPS event, it cannot provide reliable information on the impact of such power shut-off on its network or the services it provides. Currently, the CPUC requires the commercial power companies to provide notice to customers, because their knowledge of when and where these shut-off events will occur puts them in the best position to perform this function. We stand ready to work with the power companies on improving the notification process if a specific gap is identified, but because their customer notification typically involves text messages and voice calls, we do not intend to duplicate their efforts.¹

Finally, you also asked about whether there are any best practices that have been particularly helpful in the context of preparation for potential power shut-offs or wildfire. The following CSRIC best practices are consistent with the best practices that AT&T frequently uses within its NDR operations. AT&T applies these practices to a broad range of disasters and other emergencies, including any potential commercial power shut-offs or wildfire scenarios.

Consistent with the best practices listed immediately below, as we discussed in the comments that we filed in February this year, AT&T has established a Power Technology Reliability Center (TRC), through which we interface with electrical utilities on a day-to-day basis. Through the

¹ It is important to remember that the context of such a notification is the potential spread of wildfires, when consumers are already likely inundated with emergency alerts. In the best-case scenario, if messaging is completely consistent between the wireless carriers and the power companies, these notifications will become redundant and quickly contribute to “alert fatigue.” Of course, the potential for customer confusion is high if both the power companies and the wireless industry provide separate notifications and the content of these notifications is not consistent.

TRC, we ensure that we have up-to-date contact information so that we know who to contact at the power companies in the context of disasters.²

BP Number	Description
11-6-0655	Network Operators, Service Providers...should coordinate hurricane and other disaster restoration work with electrical and other utilities as appropriate.
12-10-0495	Network Operators...should consider pre-arranging contact information and access to restoral information with local power companies.

And, consistent with the best practices listed in the table below, AT&T has previously provided detail, in its November 2018 filing, about efforts to prepare for and respond to the various hurricanes from 2017 and 2018.³ Those preparatory efforts include, but are not limited to:

- Refueling of generators at cell sites⁴
- Pre-arrangement/coordination with refueling contractors⁵
- Staging of generators and vehicles⁶ / Removal of generators and vehicles from low-lying areas⁷
- Supply chain management ensuring availability of sufficient fuel⁸
- Advisory of fuel shortages⁹
- Development of a fuel emergency plan¹⁰

² See, e.g., Comments of AT&T, Public Safety and Homeland Security Bureau Seeks Comment on Improving Wireless Network Resiliency through Encouraging Coordination with Power Companies, Public Safety Docket No. 11-60 at 3 (filed Feb. 8, 2019) (AT&T Power Company Coordination Comments).

³ See, e.g., AT&T's Response to the November 6, 2018 Letter from Lisa M. Fowlkes, Chief, Public Safety and Homeland Security Bureau requesting a summary of the use of the Wireless Resiliency Cooperative Framework in 2017 & 2018, PS Docket No. 11-60 (filed Nov. 26, 2018).

⁴ *Id.*, at 2, 8, and 19.

⁵ *Id.*, at 6.

⁶ *Id.*, at 7.

⁷ *Id.*, at 10.

⁸ *Id.*, at 18.

⁹ *Id.*, at 15.

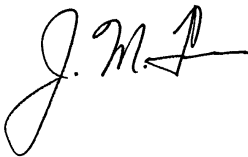
¹⁰ *Id.*, at 17.

- Post-event, business-as-usual refueling of generators to capacity¹¹

BP Number	Description
11-9-0660	Network Operators, Service Providers...should have a plan that is periodically verified for providing portable generators to offices with and without stationary engines.
11-9-5207	Network Operators, Service Providers...should take appropriate precautions to ensure that fuel supplies and alternate sources of power are available for critical installations in the event of major disruptions in a geographic area (e.g., hurricane, earthquake, pipeline disruption). Consider contingency contracts in advance with clear terms and conditions (e.g., Delivery time commitments, T&Cs).
12-9-5204	Network Operators, Service Providers...should ensure availability of emergency/backup power (e.g., batteries, generators, fuel cells) to maintain critical communications services during times of commercial power failures, including natural and manmade occurrences (e.g., earthquakes, floods, fires, power brown/black outs, terrorism). The emergency/backup power generators should be located onsite, when appropriate.

Should you have any questions regarding any of the above, please feel free to contact me directly.

Sincerely,



Cc: Mr. Robert Finley (via e-mail)

¹¹ *Id.*, at 23.